

## CLAIMS

What is claimed is:

1. In a system comprising at least one mobility server, at least one mobile  
5 router and a plurality of hosts, a method for network prefix allocation comprising the steps of:
  - detecting a need for at least one network prefix for a mobile router;
  - sending a registration request message to a mobility server that includes a request to allocate said at least one network prefix to said mobile router; and
  - 10 receiving a registration reply responsive to said registration request that includes at least one allocated network prefix, wherein said at least one allocated network prefix is reserved for said mobile router for a first time period.
2. The method of Claim 1, wherein said at least one network prefix is  
15 assigned from a pool of available network prefixes.
3. The method of Claim 2, wherein said pool of available network prefixes is pre-allocated to said mobility server.
- 20 4. The method of Claim 1, wherein said registration request message further includes a request to allocate said at least one network prefix for said first time period.
5. The method of Claim 1, wherein said first time period is assigned by said  
25 mobility server.
6. The method of Claim 5, wherein said first time period is a default time period.

7. The method of Claim 1, wherein said at least one allocated network prefix is identified in said registration request message.

8. The method of Claim 1 further comprising the step of assigning to at least one host coupled to said mobile router at least one corresponding host address based on said at least one allocated network prefix.

9. The method of Claim 8, wherein said at least one corresponding host address is assigned using a Dynamic Host Configuration Protocol.

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10. The method of Claim 1 further comprising the step of sending a subsequent registration request to said mobility server that includes a request to reserve said at least one allocated network prefix for a second time period that extends beyond said first time period.

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11. The method of Claim 1, wherein said mobility server is a home agent.

12. In a system comprising at least one home agent, at least one mobile router and a plurality of hosts, a method for network prefix allocation comprising the steps of:

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detecting a need for at least one network prefix for a mobile router;  
sending a registration request message to a home agent that includes a request to allocate said at least one network prefix to said mobile router; and  
receiving a registration reply responsive to said registration request that includes at least one allocated network prefix, wherein said at least one allocated network prefix is reserved for said mobile router for a first time period.

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13. In a system comprising at least one mobility server, at least one mobile router and a plurality of hosts, a method for network prefix allocation comprising the steps of:

receiving a registration request message from a mobile router that includes  
5 a request to allocate at least one network prefix to said mobile router;  
allocating at least one network prefix to said mobile router; and  
sending a registration reply to said mobile router responsive to said  
registration request that includes said at least one allocated network prefix,  
wherein said at least one allocated network prefix is reserved for said mobile  
10 router for a first time period.

14. The method of Claim 13 further comprising setting a timer for a time equal to said first time period.

15. The method of Claim 14 further comprising returning said at least one allocated network prefix to a pool of available network prefixes upon the expiration of said timer.

16. The method of Claim 15, wherein said pool of available network prefixes  
20 is pre-allocated to said mobility server.

17. The method of Claim 13 further comprising the step of advertising reachability via internet protocol (IP) dynamic routing protocols for said at least one allocated network prefix.

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18. The method of Claim 13, wherein said mobility server is a home agent.

19. The method of Claim 13, wherein said registration request message further includes a request to allocate said at least one network prefix for said first time  
30 period.

20. The method of Claim 13, wherein said first time period is assigned by said mobility server.

5 21. The method of Claim 20, wherein said first time period is a default time period.

22. The method of Claim 13, wherein said at least one allocated network prefix is identified in said registration request message.

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23. A mobile router configured for performing the method of Claim 1.

24. A mobility server configured for performing the method of Claim 13.